BRIDGE INSPECTION REPORT

	WO	CC	WE	PD
BAM	0	0	0	0

Status: Released

Ver Date 4/28/2011
Printed on: 4/28/2011

Agency: Washington State
Program Mgr: Harvey L. Coffman

Bridge No. 162/6 **Structure Type** CTrus CG

Bridge Name PUYALLUP R **Route** 00162 **Location** 4.4 E JCT SR 410

Structure ID 000000JD **MilePost** 6.81 **Intersecting** PUYALLUP R

Inspector's Signature FPP IDent# G0710 Co-Inspector's Signature WAW

5		Structural Adqcy	(657)	N		Pier/Abut/Protect	(679)	1934		Year Built	(332)
2		Deck Geometry	(658)	5		Scour	(680)	0		Year Rebuilt	(336)
9		Underclearance	(659)	9		Retaining Walls	(682)	F 43		Oper Rating	(551)
5		Operating Level	(660)	9		Pier Protection	(683)	F 26		Inv Rating	(554)
8		Alignment Adqcy	(661)	0		Bridge Rails	(684)	A		Open Close	(293)
6		WaterwayAdqcy	(662)	0		Transition	(685)	9999		Vert Over Deck	(360)
7		Deck Overall	(663)	1		Guardrails	(686)	0000		Vert Under	(374)
9		Drains Condition	(664)	1		Terminals	(687)	N		Vert Und Code	(378)
5		Superstructure	(671)	N		Revise Rating	(688)	3.00		Asphalt Depth	
3		Number Utilities	(675)			Photos Flag	(691)			Design Curb Height	
6		Substructure	(676)		N	Soundings Flag	(693)	50		Speed Limit	
8		Chan/Protection	(677)			Measure Clearance	(694)				
9		Culvert	(678)								

Inspections Performed:

IT	NT	HRS	Date	Rep Type
Y	24	1.5	4/4/2011	Routine
				Fract Crit
				Underwater
				Special
				Interim
				Equipment
				Damage
				Safety
				Short Span

Total: 1.5

Suff Rating: 46.21 FO 46.21 FO

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BMS Elements 12 to 801

Element	Element Description	Total	Units	State 1	State 2	State 3	State 4
12	Concrete Deck	4,620	SF	4,620	0	0	0
35	Concrete Deck Soffit	4,620	SF	4,620	0	0	0
110	Concrete Girder	160	LF	160	0	0	0
119	Concrete Truss	340	LF	0	170	170	0
155	Concrete Floor Beam	462	LF	462	0	0	0
202	Steel Pile/Column	5	EA	5	0	0	0
205	Concrete Pile/Column	4	EA	4	0	0	0
212	Concrete Submerged Pier Wall	44	LF	43	0	1	0
215	Concrete Abutment	76	LF	64	0	12	0
264	Timber Sidewalk & Supports	2,730	SF	2,730	0	0	0
311	Moveable Bearing (roller, sliding, etc)	2	EA	2	0	0	0
313	Fixed Bearing	2	EA	2	0	0	0
330	Metal Bridge Railing	80	LF	80	0	0	0
340	Metal Pedestrian Railing	340	LF	290	0	50	0
342	Timber Pedestrian Railing	80	LF	80	0	0	0
361	Scour	2	EA	2	0	0	0
362	Impact Damage	2	EA	1	1	0	0
402	Hot Poured and/or Premolded Joint Filler	44	LF	44	0	0	0
801	AC Overlay with Waterproofing Membrane	4,620	SF	4,620	0	0	0

Notes 0 to 801

0 Orientation is from west to east per route direction. The north and south concrete trusses are double trusses.

12 Covered with an ACP overlay, see element note 801.

35 Diagonal leaching cracks at corners of Spans 1 and 2.
Transverse leaching cracks at Pier 2 where it meets with deck.
There are full width transverse leaching cracks in Span 2 that typically extend into the truss bottom chords.

110 The approach spans have four concrete girder lines each.
Spans 1 and 3 webs of the outside concrete T-beams have several full height hairline leaching cracks that extend into the deck.

Bridge No. 162/6 | Page 3 of 5 | **Structure Type** CTrus CG

Bridge Name PUYALLUP R | **Route** 00162 | **Location** 4.4 E JCT SR 410

Structure ID 000000JD | **MilePost** 6.81 | **Intersecting** PUYALLUP R

Notes 0 to 801

119 Span 2 is a concrete truss.
BOTTOM CHORD: The edges have heavy leaching vertical cracks, many of which are rusting. There are a few edge spalls. The chord bottom has several transverse rusty 6" cracks.
Both chords between Floorbeams 2-12 and 2-13 have rock pockets with leached out concrete. The affected areas are approximately 2 ft. x 1 ft. x 1" deep. See photo #17.
The west end of the north chord has a few hoops exposed up to 24" due to lack of cover. Some of the hoops have up to 50 percent section loss.
The west end of the south chord on the bottom has rebars exposed due to lack of cover.
The south bottom chord near Floorbeam 2-4 has two spalls/delaminations about 1 sq. ft. in area.
The south bottom chord near Floorbeam 2-5 has three delaminations totalling about 1.5 sq. ft. in area and an 8" long spall with exposed rebar.
The south bottom chord near Floorbeam 2-15 has four 12" longitudinal rebars exposed due to lack of cover.

TOP CHORD: The ouside face at the ends and bottoms have hairline vertical leaching cracks especially bottom of south and north trusses at east portals.
North outside truss member U1-U2 has been repaired. REPAIR #12888 verified 4/4/2011, see Photo #21 and #25.

DIAGONALS AND VERTICALS:
All diagonals have transverse and longitudinal cracks. The diagonal cracks on several members are open up to 1/4" and have delaminated concrete around the edges. Many of the diagonal and vertical member longitudinal cracks and delaminations have been patched.
The verticals are separated by mid-height struts and several of the diagonal bars are exposed on the strut due to lack of cover. This defect is located at U2 and U3 South. See photo #10.

NORTH TRUSS defects noted:
The U2 sidewalk portal on the west side has 8" of exposed rebar due to lack of cover.
The U2-L3 inside diagonal has been patched on top surface. See photo #22. The bottom surface is cracked over the lower half. See photo #23.
The U4 sidewalk portal on the west side has 18" of exposed rebar due to lack of cover in addition to a 12" x 4" delamination. REPAIR 12888.
The L5-U5 outside vertical at the NE corner at the hand rail connection has a 2 ft. x 1 ft. patch. See photo #13.
The L6-U7 inside diagonal on the top face has been repaired. REPAIR #12888 verified 4/4/2011, see Photo #26.
The L7-U8 inside diagonal bottom surface near U8 has been repaired. REPAIR #12888 verified 4/4/2011, see Photo #27.
The L7-U8 outside diagonal bottom surface near U8 has been repaired. REPAIR #12888 verified 4/4/2011, see Photo #28.
The L8-U8 vertical has 18" of exposed rebar on the west face due to lack of cover.
The L8-U9 inside diagonal top surface has been repaired. REPAIR #12888 verified 4/4/2011, see Photo #29.
The L8-U9 outside diagonal on the top face and bottom surface have been repaired. REPAIR #12888 verified 4/4/2011, see Photos #6 and #30.
The L9-U9 inside vertical has a 21" x 8" traffic impact patch along with a 6" x 2" x 1" deep spall.

SOUTH TRUSS defects noted:
The U3-L4 inside diagonal at the top has been repaired. REPAIR #12888 verified 4/4/2011, see Photo #31.
The U3-L4 outside diagonal at the top has been repaired. REPAIR #12888 verified 4/4/2011, see Photo #31.
The L5-U6 inside diagonal at the bottom and the south edge has been repaired. REPAIR #12888 verified 4/4/2011, see Photo #32.
The L6-U7 inside diagonal on the west and south surfaces has been repaired. REPAIR #12888 verified 4/4/2011, see Photo #33.
The L7-U8 inside diagonal at the bottom and east surfaces has been repaired. REPAIR #12888 verified 4/4/2011, see Photo #34.
The L9-U9 vertical has a vertical leaching crack at top of west face that goes into top chord.

155 Span 2 has 21 concrete floorbeams numbered from 2-0 to 2-20. The concrete floorbeams have several exposed rusty stirrups due to lack of cover. Where the floorbeams frame into the bottom chords there are vertical hairline leaching cracks (especially near Floorbeams 2-5 and 2-11).

202 The west abutment cap is undermined and five H-piles are exposed up to 20". Two of the pilings have minor laminar surface rust.

205 The concrete columns have rough and weathered concrete.

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Notes 0 to 801

212	The Pier 2 and 3 pier walls between the truss columns are wet and moss covered and have a few hairline vertical cracks. The Pier 2 wall on the east face near the top has an 8" diameter x 2-1/2" spall with 4" of exposed rebar. Horizontal leaching cracks at mid-height on west face of Pier 2 wall.
215	The west concrete abutment cap is undermined. The east abutment cap has a couple of rock pockets about 4 ft. x 3 ft. in area.
264	The approach spans (Spans 1 and 3) have timber girders supporting the sidewalks. The truss span (Span 2) has timber planking that is supported by the truss bottom chord. The timber sidewalk planks are worn, split, and frayed. The approach span girders are wet and mud stained and have green fungus growth in scattered spots.
311	The rocker bearings are located at Pier 2. During the 2011 inspection the rockers were in the vertical position.
313	The fixed bearing shoes are located at Pier 3.
340	Some of the Span 2 pedestrian rail connections have been fixed. However, some are still loose, see Photo #35. REPAIR 12289.
342	The timber pedestrian rails are located at Spans 1 and 3. The paint is peeling on the vertical surfaces and missing on the top horizontal surfaces. See photo #18. REPAIR 12286.
361	The Puyallup River flows from the south to the north below Span 2. Piers 2 and 3 are considered to be in ordinary high water. Pier 3 has heavy riprap on the stream side.
362	The north inside truss has a traffic impact spall at U9. U1south, U2 north and U5 north inside truss traffic spalls have been patched.
402	The poured rubber joints are located at Piers 2 and 3.
671	The NBI Superstructure code is a '5' due to the spalling, cracking, and delamination of the truss diagonals.
675	There is a 16" diameter insulated pipe suspended from the north edge. There is a 5" diameter insulated pipe under the north sidewalk. There is a 6" diameter steel conduit suspended from the south edge.
680	This bridge has a pile foundation with greater than 20 ft. of penetration.
684	The bridge rails have not been crash tested.
685	The transitions are not nested Thrie-beam.
693	Soundings done in 2011 from the south rail.
801	The AC overlay has ruts in the wheel lines and is cracked transversely over the east abutment.

Repairs 12288 to 12286

Repair	P	R	Repair Description	Date Noted	Verified
12288	1	B	Remove loose concrete from delaminations, clean rusty bars, epoxy coat exposed bars, and patch at the following locations; NORTH TRUSS: Both faces of north outside truss member U1-U2, U4 sidewalk portal westside, L6-U7 inside diagonal top face, L7-U8 inside and outside diagonals bottom surfaces near U8, and L8-U9 inside and outside diagonals top surfaces. SOUTH TRUSS: U3-L4 inside and outside diagonals top surfaces, L5-U6 inside diagonal bottom surface and south edge, L6-U7 inside diagonal west and south surfaces, L7-U8 inside diagonal bottom and east surfaces.	6/25/2009	4/4/2011
12289	1	B	Tighten the Span 2 pedestrian rail anchor screws at the truss vertical connections.	7/15/2009	
12290	1	B	Remove loose concrete from delaminations, clean rusty bars, epoxy coat exposed bars, and patch at the following locations in the North Truss: The U2-L3 member, the bottom surface is cracked over the lower half. The U4 sidewalk portal on the west side has 18" of exposed rebar due to lack of cover.	4/4/2011	
12286	2	B	Paint the approach span pedestrian rails.	5/15/2007	

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Bridge No. 162/6
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Structure ID 000000JD

Route 00162
MilePost 6.81

Structure Type CTrus CG
Location 4.4 E JCT SR 410
Intersecting PUYALLUP R

Inspections Performed and Resources Required

Report Type	Date	IT	Frq	Hrs	Insp	CertNo	Coinsp	Note
Routine	4/4/2011		24	1.5	FPP	G0710	WAW	

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
NBI STRUCTURE INVENTORY AND APPRAISAL REPORT (ENGLISH UNITS)

DATE 5/2/2011

IDENTIFICATION

(1)	STATE NAME - WASHINGTON	530
(8)	STRUCTURE NUMBER	# 000000JD0000000
(5)	INVENTORY ROUTE (ON/UNDER) - on	1 3 1 00162
(2)	HIGHWAY AGENCY DISTRICT	03
(3)	COUNTY CODE 53	(4) PLACE CODE 00000
(6)	FEATURES INTERSECTED	PUYALLUP R
(7)	FACILITY CARRIED	SR 162
(9)	LOCATION	4.4 E JCT SR 410
(11)	MILEPOINT	6.81
(12)	BASE HIGHWAY NETWORK - Not part of network	0
(13)	LRS INV ROUTE AND SUB ROUTE	
(16)	LATITUDE	47 Deg 7 Min 47.00 Sec
(17)	LONGITUDE	122 Deg 14 Min 6.00 Sec
(98)	BORDER BRIDGE STATE CODE - Not a border bridge	
(99)	BORDER BRIDGE STRUCTURE NO	

STRUCTURE TYPE AND MATERIAL

(43)	STRUCTURE TYPE MAIN: MATERIAL - Concrete	
	DESIGN - Truss - Thru	110
(44)	STRUCTURE TYPE APPR: MATERIAL - Concrete	
	DESIGN - Tee beam	104
(45)	NO. OF SPANS IN MAIN UNIT	1
(46)	NO. OF APPROACH SPANS	2
(107)	DECK STRUCT TYPE - Conc. CIP	1
(108)	WEARING SURFACE / PROTECTIVE SYSTEM:	
(A)	TYPE OF WEARING SURFACE - Bituminous	6
(B)	TYPE OF MEMBRANE - Preformed fabric	2
(C)	TYPE OF DECK PROTECTION - None	0

AGE AND SERVICE

(27)	YEAR BUILT	1934
(106)	YEAR RECONSTRUCTED	0
(42)	TYPE OF SERVICE ON - Highway & Pedestrian	5
	UNDER - Waterway	5
(28)	LANES: ON STRUCTURE 2	UNDER STRUCTURE 0
(29)	AVERAGE DAILY TRAFFIC	18425
(30)	YEAR OF ADT 2007	(109) TRUCK ADT 10%
(19)	BYPASS, DETOUR LENGTH	18.0 mi

GEOMETRIC DATA

(48)	LENGTH OF MAXIMUM SPAN	170 ft
(49)	STRUCTURE LENGTH	210 ft
(50)	CURB OR SIDEWALK: LEFT 6.5 ft	RIGHT 6.5 ft
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB	22.0 ft
(52)	DECK WIDTH OUT TO OUT	37.5 ft
(32)	APPROACH ROADWAY WIDTH (W/SHOULDERS)	30 ft
(33)	BRIDGE MEDIAN - No median	0
(34)	SKEW 0 Deg	(35) STRUCTURE FLARED no 0
(10)	INVENTORY ROUTE MIN VERT CLEAR	
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	22 ft 00 in
(53)	MIN VERT CLEAR OVER BRIDGE RDW	99 ft 99 in
(54)	MIN VERT UNDERCLEAR	0 ft 00 in
(55)	MIN LAT UNDERCLEAR RT	0.0 ft
(56)	MIN LAT UNDERCLEAR LT	0.0 ft

NAVIGATION DATA

(38)	NAVIGATION CONTROL - No nav control	0
(111)	PIER PROTECTION -	
(39)	NAVIGATION VERTICAL CLEARANCE	0 ft
(116)	VERT-LIFT BRIDGE NAV MIN VERT CLR	
(40)	NAVIGATION HORIZONTAL CLR	0 ft

WSBIS DATA

BRIDGE NUMBER	162/6
BRIDGE NAME	PUYALLUP R
CUSTODIAN	Washington State
CROSSING DESC	PUYALLUP R
CROSSING KEY	00162 00 00681 00 M Y
SUFFICIENCY RATING	46.21 FO

CLASSIFICATION

(112)	NBIS BRIDGE LENGTH	Y
(104)	HIGHWAY SYSTEM - Not on the NHS	0
(26)	FUNCTIONAL CLASS - Minor Arterial	16
(100)	DEFENSE HIGHWAY - Not a STRAHNET route	0
(101)	PARALLEL STRUCTURE - Not a parallel bridge	N
(102)	DIRECTION OF TRAFFIC - 2-way traffic	2
(103)	TEMPORARY STRUCTURE -	
(105)	FEDERAL LANDS HIGHWAY - Not Applicable	0
(110)	DESIGNATED NATIONAL NETWORK - Part of network	1
(20)	TOLL - Non-toll structure	3
(21)	MAINTAIN - State Highway Agency	1
(22)	OWNER - State Highway Agency	1
(37)	HISTORICAL SIGNIFICANCE - On the NRHP	1

CONDITION

(58)	DECK	7
(59)	SUPERSTRUCTURE	5
(60)	SUBSTRUCTURE	6
(61)	CHANNEL AND CHANNEL PROTECTION	8
(62)	CULVERTS	N

LOAD RATING AND POSTING

(31)	DESIGN LOAD - H 15	2
(63)	OPERATING RATING METHOD - Load Factor (LF)	1
(64)	OPERATING RATING	43 T
(65)	INVENTORY RATING METHOD - Load Factor (LF)	1
(66)	INVENTORY RATING	26 T
(70)	BRIDGE POSTING - Equal or above legal loads	5
(41)	STRUCT OPEN, POSTED, CLOSED - Open, no restrictions	A

APPRAISAL

(67)	STRUCTURAL EVALUATION	5
(68)	DECK GEOMETRY	2
(69)	UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71)	WATERWAY ADEQUACY	6
(72)	APPROACH ROADWAY ALIGNMENT	8
(36)	TRAFFIC SAFETY FEATURES	0011
(112)	SCOUR CRITICAL BRIDGE	5

PROPOSED IMPROVEMENTS

(75)	TYPE OF WORK -	311
(76)	LENGTH OF STRUCTURE IMPROVEMENT	260.0 ft
(94)	BRIDGE IMPROVEMENT COST	$4,576,000
(95)	ROADWAY IMPROVEMENT COST	$915,000
(96)	TOTAL PROJCECT COST	$9,152,000
(97)	YEAR OF IMPROVEMENT COST ESTIMATE	2010
(114)	FUTURE ADT	27638
(115)	YEAR OF FUTURE ADT	2027

INSPECTIONS

(90)	INSPECTION DATE 04/11	(91) FREQUENCY 24 MO
(92)	CRITICAL FEATURE INSPECTION:	(93) CFI DATE
	(A) FRACTURE CRIT DETAIL - NO -	Month (A) __/__
	(B) UNDERWATER INSP - NO -	Month (B) __/__
	(C) OTHER SPECIAL INSP - NO -	Month (C) __/__